U.S. Department
of Transportation

ITS STANDARDS TESTING PROGRAM

Objectives of the Standards Testing Program

To promote the integration and interoperability of ITS technologies and products, the U.S. DOT is undertaking a comprehensive program to test ITS standards that are emerging from the standards development process. The primary purposes of the standards testing program are to investigate the performance of the standards and to "prove" the standards in realistic transportation settings under realistic conditions. As an important step to encourage acceptance and early adoption of the standards, testing will provide timely and meaningful information on standards performance to the ITS community. Through testing and widespread distribution of test results, ITS standards will "mature" more quickly, thereby leading to their earlier acceptance by ITS stakeholders.

The standards testing program will leverage ongoing and planned ITS field deployments. The intent of this approach is to bring together public agency and private sector participants for their mutual benefit. Where necessary, laboratory simulation testing or testing in a special-purpose test bed may also be performed.

The Standards Testing Process

An iterative process will guide the testing of ITS standards. The process contains the following elements:

- **Develop Taxonomy:** To find a logical starting point for standards testing, the dependencies among related standards were analyzed and first order ITS standards were identified. The Taxonomy Report can be found on the U.S. DOT Web site.
- **Identify Standards to be Tested:** Working with the standards development organizations (SDOs), approximately 55 ITS standards were identified for testing. Those standards initially identified can be found on the U.S. DOT Web site. Additional standards may be included in the future as new ones are developed.
- **Select Sites and Develop Memoranda of Understanding:** Test sites for standards to be tested are selected based upon established criteria. A site-specific memorandum of understanding (MOU) is developed to document the agreement for testing and to outline participant responsibilities.
- **Develop Field Test Plans:** Test plans and procedures are needed for each standard. These identify the context, inputs, and outputs for testing, along with practical issues such as budget, staff, and equipment. The test plans are site specific to match the testing environment.
- **Conduct Tests:** To perform testing, the test team moves on site to collaborate with test-site managers. Site-specific tests are then run and test results collected.

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- **Analyze Results and Write Reports:** Using the results from field testing, test team members analyze the results of each test and prepare test reports. During the analysis, collaboration occurs between the analysis team and other stakeholders, such as:
  - **Architecture Experts** who help to identify standards and their dependencies within the National ITS Architecture and review the test results.
  - **U.S. DOT** staff who review the test results and determine whether any further actions are needed by the public sector.
  - **Product Manufacturers** who review the test results and reports to ensure they demonstrate the performance and benefits that will enhance the market for ITS products.
  - **Public Agencies** who, as deployers of public ITS infrastructure, review the standards testing program and results for demonstration of interoperability and usefulness in procurement processes.
  - **Standards Development Organizations (SDOs)** who provide advice on the standards, maintain an on-going dialogue with developers of each standard, and review the results for any needed refinements to the standards. (The SDOs include AASHTO, ANSI, ASTM, CEA, IEEE, ITE, NEMA, SAE, SIA, and TIA.)
- **Disseminate Results:** Before, during, and after testing, a comprehensive outreach program keeps all target audiences and stakeholders informed of results. Final reports will be available on the U.S. DOT ITS Standards Web site and presentations will be given at transportation-related conferences and meetings.

Timeframe for Testing

The 30-month testing program began in March, 1999 with the selection of a team led by the Battelle Memorial Institute. This multipdisciplinary team of technical experts is working with the ITS standards community and deployment sites. As ITS standards continue to emerge from the standards development process, they will be added to the testing program where appropriate.

For Further Information

- The U.S. DOT ITS Standards Web site contains up-to-the-minute information on testing and related standards efforts:

  http://www.its.dot.gov/standard/standard.htm

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